

Application No. 10/649,369

Filed: August 27, 2003

TC Art Unit: 2837

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AMENDMENTS TO THE CLAIMS

1. (currently amended) A preamplifier assembly for a musical instrument, comprising:

a housing including a face portion and an integral battery holder, the battery holder being configured to hold a battery, the housing being connectable to a surface of the musical instrument while allowing unobstructed user access to the face portion of the housing,

wherein the face portion includes a bezel and at least one cover retaining element, the bezel having at least one slot opening formed therein, one end of the slot opening defining a pivot point;

a cover for securely enclosing the battery within the battery holder, the cover being ~~movably~~ slidably and pivotally mounted on the face portion of the housing ~~to allow the user to access the battery within the battery holder,~~

wherein the cover has a first edge, at least one pivot pin formed thereon adjacent the first edge, and at least one cover locking surface,

wherein the slot opening is configured to receive the pivot pin to facilitate slidable and pivotable movement of the cover between a closed position and an opened position, the closed

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position enclosing the battery within the battery holder, the opened position allowing the user to access the battery within the battery holder,

wherein the cover retaining element is configured to engage the cover locking surface when the cover is in the closed position, and

wherein the cover is configured to allow the user to move it from the closed position to the opened position by sliding the cover to disengage the cover locking surface from the cover retaining element and to move the pivot pin within the slot opening to the pivot point, the first edge of the cover adjacent the pivot pin being a leading edge during the sliding movement, and by pivoting the cover about the pivot point to the opened position, thereby allowing the user to open the cover in substantially one continuous movement;

a printed circuit board subassembly disposed within the housing, the printed circuit board subassembly including at least one printed circuit board;

preamplifier circuitry disposed on the at least one printed circuit board, the preamplifier circuitry being operative to receive an input signal from at least one input device, and to

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generate an output signal, the battery being operative to supply power to the preamplifier circuitry; and

an integral output connector operatively connected to the preamplifier circuitry for providing the output signal, the output connector being directly attached to the at least one printed circuit board, and being mounted on the face portion of the housing to secure the printed circuit board assembly within the housing,

wherein the integral output connector comprises an output jack, and wherein the face portion of the housing is configured to provide a structural reinforcement for the output jack.

2. (previously presented) The preamplifier assembly of claim 1 further including at least one control mechanism operatively connected to the preamplifier circuitry, the control mechanism being configured to control at least one characteristic of the output signal provided by the preamplifier circuitry via the output connector.

3. (original) The preamplifier assembly of claim 2 wherein the face portion of the housing is configured to allow the user to access the control mechanism.

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4. (original) The preamplifier assembly of claim 2 wherein the signal characteristic controlled by the control mechanism is selected from the group consisting of volume and tone.

5. (original) The preamplifier assembly of claim 1 wherein the housing includes an electronics enclosure, the electronics enclosure being configured to house the preamplifier circuitry.

6. (canceled)

7. (original) The preamplifier assembly of claim 1 wherein the housing further includes a mounting flange configured to connect the housing to the surface of the musical instrument.

8. (original) The preamplifier assembly of claim 7 wherein the surface of the musical instrument is a planar or contoured surface, and wherein the mounting flange is configured for flexibly and conformably connecting the housing to the planar or contoured surface of the instrument.

9. (canceled)

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10. (previously presented) The preamplifier assembly of claim 1 wherein the at least one input device is selected from the group consisting of a pre-wired pickup, a pre-wired microphone, a vibration sensitive transducer, a force sensor, an accelerometer, and a pressure sensor.

11. (previously presented) The preamplifier assembly of claim 1 wherein the at least one input device includes a first input device and a second input device, the first and second input devices being configured to provide respective input signals to the preamplifier circuitry.

12. (original) The preamplifier assembly of claim 11 further including at least one control mechanism operatively connected to the preamplifier circuitry for adjustably blending the respective input signals provided by the first and second input devices.

13. (original) The preamplifier assembly of claim 12 wherein the face portion of the housing is configured to allow the user to access the control mechanism.

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14. (original) The preamplifier assembly of claim 1 wherein the musical instrument is selected from the group consisting of an acoustic guitar, a hollow body electric guitar, a semi-hollow body electric guitar, a solid body electric guitar, a ukulele, a mandolin, a violin, a viola, a cello, and a bass violin.

15. (canceled)

16. (canceled)

17. (previously presented) The preamplifier assembly of claim 1 wherein the output jack is configured to receive an output plug, the preamplifier circuitry including a shorting contact configured to be actuated when the output plug is received by the output jack, thereby allowing power to be supplied to the preamplifier circuitry by the battery.

18. (previously presented) The preamplifier assembly of claim 1 wherein the printed circuit board subassembly comprises first and second printed circuit boards and a printed circuit board spacer, the first and second circuit boards being mechanically connected

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to each other in a predetermined fixed orientation by the circuit board spacer.

19. (original) The preamplifier assembly of claim 18 wherein the preamplifier circuitry is disposed on at least one of the first and second circuit boards.

20. (previously presented) The preamplifier assembly of claim 18 wherein the output connector is directly attached to a selected one of the first and second circuit boards.

21. (original) The preamplifier assembly of claim 20 wherein the face portion of the housing has an opening formed therethrough, wherein the circuit board assembly is configured to engage the housing, and wherein the first and second circuit boards are oriented to allow the user to access the output connector via the opening when the circuit board assembly engages the housing.

22. (previously presented) The preamplifier assembly of claim 21 wherein the output jack is mounted on the face portion of the housing at the opening formed therethrough.

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23. (currently amended) A preamplifier housing for a musical instrument, the housing being connectable to a surface of the musical instrument, comprising:

a face portion having an opening formed therethrough, the housing being connectable to the surface of the musical instrument while allowing unobstructed user access to the face portion of the housing;

an electronics enclosure configured to house preamplifier circuitry, the preamplifier circuitry being disposed on at least one printed circuit board, the housing being configured to allow the at least one printed circuit board to engage the housing, thereby causing an integral output connector directly attached to the printed circuit board to be in registration with the opening formed through the face portion of the housing, the output connector comprising an output jack, and

wherein the face portion of the housing is configured to allow the output jack to be mounted on the face portion at the opening formed therethrough to secure the at least one printed circuit board within the housing, the face portion being configured to provide a structural reinforcement for the output jack;

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an integral battery holder configured to hold a battery therein for powering the preamplifier circuitry, the face portion of the housing being configured to provide access to the battery held within the battery holder; and

a cover movably mounted on the face portion of the housing, the cover being configured to enclose the battery within the battery holder.

24. (original) The preamplifier housing of claim 23 wherein the cover is slidably mounted on the face portion of the housing.

25. (original) The preamplifier housing of claim 23 wherein the cover is pivotally and slidably mounted on the face portion of the housing.

26. (original) The preamplifier housing of claim 25 wherein the cover includes at least one cover locking surface and the face portion of the housing includes at least one cover retaining element, the cover retaining element being configured to engage the cover locking surface when the cover encloses the battery within the battery holder.

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27. (currently amended) The preamplifier housing of claim 26 wherein the cover has at least one pivot formed thereon, and wherein the face portion of the housing includes a bezel, the bezel having at least one slot formed therein, one end of the slot defining a pivot point, the slot being configured to receive the pivot to facilitate slidable and pivotable movement of the cover between a closed position and an opened position, the closed position enclosing the battery within the battery holder, the opened position allowing the user to access the battery within the battery holder.

28. (currently amended) The preamplifier housing of claim 27 wherein the cover has a first edge, the at least one pivot being formed on the cover adjacent the first edge, and wherein the cover is configured to allow the user to move it from the closed position to the opened position by sliding the cover to disengage the cover locking surface from the cover retaining element and to move the pivot within the slot opening to the pivot point, the first edge of the cover adjacent the pivot being a leading edge during the sliding movement, and by pivoting the cover about the pivot point to the opened position, thereby allowing the user to open the cover in substantially one continuous movement—is

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~~configured to rotate about the pivot to enclose the battery within the battery holder and to open the battery holder to allow the user to access the battery therein, the slot being configured to allow the cover locking surfaces to slidably engage the cover retaining elements.~~

29. (original) The preamplifier housing of claim 28 wherein the battery holder has a plurality of battery terminals disposed therein, the cover having at least one rib formed on a surface thereof, the rib being configured to push the battery toward the battery terminals when the cover encloses the battery in the battery holder.

30. (original) The preamplifier housing of claim 29 wherein the terminals are configured to urge the battery against the at least one rib formed on the cover, thereby causing the cover locking surface on the cover to securely engage the cover retaining element on the face portion of the housing.

31. (original) The preamplifier housing of claim 23 further including a mounting flange configured to connect the housing to the surface of the musical instrument.

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32. (original) The preamplifier housing of claim 31 wherein the surface of the musical instrument is a planar or contoured surface, and wherein the mounting flange is configured for flexibly and conformably connecting the housing to the planar or contoured surface of the instrument.

33. (currently amended) A method of assembling a preamplifier for a musical instrument, the preamplifier assembly including a housing having a face portion, the housing being configured to connect to a surface of the musical instrument while allowing unobstructed user access to the face portion of the housing, comprising the steps of:

in a first connecting step, operatively connecting an input device to preamplifier circuitry, the preamplifier circuitry being disposed on at least one printed circuit board of a printed circuit board subassembly;

in a second connecting step, operatively connecting an integral output connector to the preamplifier circuitry, the output connector comprising an output jack;

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in a first attaching step, mechanically attaching the output connector directly to the at least one circuit board of the circuit board subassembly;

disposing the circuit board subassembly having the input device and the output connector connected thereto within the housing, the output connector being in registration with an opening formed through the face portion of the housing; and

in a second attaching step, mechanically attaching the output connector to the face portion of the housing at the opening formed therethrough, thereby ~~securing the circuit board assembly within the housing and~~ allowing the user to access the output connector via the opening in the face portion, the second attaching step including mechanically attaching the output jack to the face portion of the housing at the first opening formed therethrough by at least one fastener to secure the circuit board assembly within the housing,

wherein the face portion of the housing is configured to provide a structural reinforcement for the output jack,

wherein the housing includes an electronics enclosure for housing the circuit board assembly and an integral battery holder for holding a battery to power the preamplifier circuitry, the

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battery being accessible by the user through a second opening formed in the face portion of the housing; and

in a third attaching step, attaching a captive cover for the second opening for securely enclosing the battery within the battery holder, the cover being movably mounted on the face portion of the housing.

34. (original) The method of claim 33 wherein the first connecting step includes operatively connecting the input device to the preamplifier circuitry, the input device being selected from the group consisting of a pre-wired pickup, a pre-wired microphone, a vibration sensitive transducer, a force sensor, an accelerometer, and a pressure sensor.

35. (canceled)

36. (previously presented) The method of claim 33 wherein the circuit board subassembly comprises first and second printed circuit boards and a printed circuit board spacer, and further including the step of disposing the first and second circuit boards on the circuit board spacer to mechanically interconnect the circuit boards in a predetermined fixed orientation, thereby

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allowing the user to access the output connector via the first opening in the face portion when the circuit board subassembly is disposed in the housing.

37. (original) The method of claim 36 wherein the circuit board spacer has a guide rail formed on a length thereof, wherein the housing has mounting rail formed on a surface thereof, and wherein the step of disposing the circuit board subassembly within the housing includes slidingly engaging the guide rail to the mounting rail.

38. (canceled)

39. (previously presented) The method of claim 33 wherein the battery holder has a plurality of battery terminals disposed therein, and further including the step of operatively connecting the battery terminals to the preamplifier circuitry.

40. (currently amended) A method of installing a preamplifier assembly in a musical instrument, the preamplifier assembly having a housing with a mounting flange for connecting the

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housing to a surface of the musical instrument, comprising the steps of:

forming a first opening in the musical instrument, the first opening having a size sufficient to receive the housing of the preamplifier assembly;

optionally forming a second opening in the musical instrument, the second opening having a size sufficient to receive a pickup operatively connected to the preamplifier assembly;

installing the pickup on the musical instrument by optionally inserting the pickup through the second opening formed in the musical instrument;

disposing the housing within the first opening formed in the musical instrument to allow the mounting flange to overlap a portion of the surface of the musical instrument,

wherein the housing includes a face portion and an integral battery holder configured to hold a battery, the battery holder having a captive cover for securely enclosing the battery within the battery holder, the cover being movably mounted on the face portion of the housing, and

wherein the housing is disposed within the first opening in the musical instrument to allow user access to the battery within

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the battery holder via the captive cover movably mounted on the face portion of the housing; and

fastening the mounting flange to the surface of the musical instrument to secure the preamplifier assembly to the instrument,

wherein the preamplifier assembly includes a printed circuit board subassembly and an integral output connector comprising an output jack, the printed circuit board subassembly being disposed within the housing and including at least one printed circuit board, the output connector being directly attached to the at least one printed circuit board, the output jack being mechanically attached ~~and being mounted~~ to the face portion of the housing by at least one fastener to secure the printed circuit board subassembly within the housing, ~~the output jack being attached to the face portion of the housing,~~ the face portion providing a structural reinforcement for the output jack, and

wherein the mounting flange is fastened to the musical instrument surface to allow unobstructed user access to the face portion of the housing and the output connector connected thereto.

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41. (original) The method of claim 40 wherein the musical instrument comprises an acoustic stringed instrument including a body, a bridge, and a saddle slot, wherein the second forming step includes forming the second opening through the bridge, and wherein the installing step includes inserting the pickup from inside the instrument body through the opening in the bridge for subsequent insertion in the saddle slot.

42. (original) The method of claim 40 wherein the musical instrument comprises a stringed instrument, and wherein the first forming step includes forming the first opening in a side of a lower bout of the instrument.